**Supplementary Table 1. The gene list of hypoxia related genes signature.**

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| Hypoxia related gene symbol |
| |  | | --- | | ACKR3 | | ADM | | ADORA2B | | AK4 | | AKAP12 | | ALDOA | | ALDOB | | ALDOC | | AMPD3 | | ANGPTL4 | | ANKZF1 | | ANXA2 | | ATF3 | | ATP7A | | B3GALT6 | | B4GALNT2 | | BCAN | | BCL2 | | BGN | | BHLHE40 | | BNIP3L | | BRS3 | | BTG1 | | CA12 | | CASP6 | | CAV1 | | CAVIN1 | | CAVIN3 | | CCN1 | | CCN2 | | CCN5 | | CCNG2 | | CDKN1A | | CDKN1B | | CDKN1C | | CHST2 | | CHST3 | | CITED2 | | COL5A1 | | CP | | CSRP2 | | CXCR4 | | DCN | | DDIT3 | | DDIT4 | | DPYSL4 | | DTNA | | DUSP1 | | EDN2 | | EFNA1 | | EFNA3 | | EGFR | | ENO1 | | ENO2 | | ENO3 | | ERO1A | | ERRFI1 | | ETS1 | | EXT1 | | F3 | | FAM162A | | FBP1 | | FOS | | FOSL2 | | FOXO3 | | GAA | | GALK1 | | GAPDH | | GAPDHS | | GBE1 | | GCK | | GCNT2 | | GLRX | | GPC1 | | GPC3 | | GPC4 | | GPI | | GRHPR | | GYS1 | | HAS1 | | HDLBP | | HEXA | | HK1 | | HK2 | | HMOX1 | | HOXB9 | | HS3ST1 | | HSPA5 | | IDS | | IER3 | | IGFBP1 | | IGFBP3 | | IL6 | | ILVBL | | INHA | | IRS2 | | ISG20 | | JMJD6 | | JUN | | KDELR3 | | KDM3A | | KIF5A | | KLF6 | | KLF7 | | KLHL24 | | LALBA | | LARGE1 | | LDHA | | LDHC | | LOX | | LXN | | MAFF | | MAP3K1 | | MIF | | MT1E | | MT2A | | MXI1 | | MYH9 | | NAGK | | NCAN | | NDRG1 | | NDST1 | | NDST2 | | NEDD4L | | NFIL3 | | NOCT | | NR3C1 | | P4HA1 | | P4HA2 | | PAM | | PCK1 | | PDGFB | | PDK1 | | PDK3 | | PFKFB3 | | PFKL | | PFKP | | PGAM2 | | PGF | | PGK1 | | PGM1 | | PGM2 | | PHKG1 | | PIM1 | | PKLR | | PKP1 | | PLAC8 | | PLAUR | | PLIN2 | | PNRC1 | | PPARGC1A | | PPFIA4 | | PPP1R15A | | PPP1R3C | | PRDX5 | | PRKCA | | PYGM | | RBPJ | | RORA | | RRAGD | | S100A4 | | SAP30 | | SCARB1 | | SDC2 | | SDC3 | | SDC4 | | SELENBP1 | | SERPINE1 | | SIAH2 | | SLC25A1 | | SLC2A1 | | SLC2A3 | | SLC2A5 | | SLC37A4 | | SLC6A6 | | SRPX | | STBD1 | | STC1 | | STC2 | | SULT2B1 | | TES | | TGFB3 | | TGFBI | | TGM2 | | TIPARP | | TKTL1 | | TMEM45A | | TNFAIP3 | | TPBG | | TPD52 | | TPI1 | | TPST2 | | UGP2 | | VEGFA | | VHL | | VLDLR | | WSB1 | | XPNPEP1 | | ZFP36 | | ZNF292 | |